

“BINGE DRINKING”: CLINICAL AND SOCIAL ASPECTS IN PEDIATRIC EMERGENCIES – CASE PRESENTATION

V.E. Roșu^{1*}, Elena Țarcă², Oana Lăcrămioara Bădărău³,
Solange Tamara Roșu⁴

¹ Grigore T. Popa University of Medicine and Pharmacy of Iași, Pediatric Clinic IV

² Grigore T. Popa University of Medicine and Pharmacy of Iași, Department of Pediatric Surgery

³ Petre Andrei University of Iași, Faculty of Psychology, Education Sciences and Social Assistance

⁴ Grigore T. Popa University of Medicine and Pharmacy of Iași, Department of Nursing

* **Corresponding author**, e-mail: rosuedy@yahoo.com

Abstract

Specialized studies and practical experience indicate that the primary cause for ethyl alcohol intoxication in teenagers is the binge-drinking type of alcohol consumption. Binge-drinking entails the episodic paroxysmal ingestion of a large quantity of alcohol over a short period of time, with both short and long term clinical and social implications. The article presents the features and evolution of a 17-year-old male patient after binge-drinking alcohol. Such cases are medical, psychiatric and forensic medicine emergencies in a pediatric emergency department.

Keywords: “binge”, emergency, teenager

Introduction

NIAAA (National Institute on Alcohol Abuse and Alcoholism)/USA (United States of America) defines the concept of “binge drinking” as follows: the ingestion of 5 standard units of alcohol in males and 4 standard units of alcohol in females, over short periods of time (~2 hours), which determines a blood-alcohol level of ≥ 80 mg/dl, a threshold with health-damaging effects in adults ≥ 21 years old [1]. A standard beverage equals 10 grams of pure alcohol [2], the quantity of pure alcohol resulting from the report between the quantity of ingested alcohol (in ml) and alcohol concentration (%). Binge-drinking is the episodic, paroxysmal consumption of alcohol on weekends or in various social events. The ingestion of large quantities of alcohol over short periods of time exceeds the body’s capacity to metabolize ethyl alcohol. A review of the specialized literature on the term “binge” in a clinical

sense shows that the NIAAA definition is the most widely used, but it is not unanimously accepted. In the United Kingdom, “binge drinking” is defined as 8 standard drinks in males and 6 standard drinks in females, over the course of a day [3]. In children and teenagers, the number of standard alcoholic drinks that determine blood alcohol levels of ≥ 80 mg/dl, according to the AAP (American Academy of Pediatrics) [4] is of minimum 3 standard drinks for boys aged 9-13 years old, minimum 4 standard drinks for boys aged 14-15 years old and minimum 5 standard drinks for those aged 16-17 years, while for girls aged 9-17 years old the intake is 3 or more standard drinks, consumed at least once a month. There is no consensus on defining this type of acute ethyl alcohol intoxication in children and teenagers, but it is an urgent public health problem in need of prevention.

We are presenting a case of acute ethyl alcohol intoxication in a teenage boy, with

medical and social implications in the context of binge drinking.

Case presentation

The patient T.P.I., a 17-year-old male, was admitted to the Emergency Unit of "Sfânta Maria" Clinical Emergency Children's Hospital in Iași on 20.01.2019 at 00:49. The patient was brought in from his home, located in a rural area, by a medical crew from the County Ambulance Station (SAJ) and police officers. The causes of admission included: psychomotor agitation, alcohol halitosis, multiple wounds on the dorsal side of the left forearm. The SAJ crew found the patient in a state of psychomotor agitation caused by the consumption of ethyl alcohol. Following an altercation with his father, the child had self-inflicted cut () wounds using a kitchen knife. The police officers called on site by the SAJ crew removed the knife from the child. The child declared he had ingested beer ~ 1 bottle (we have no exact data on the volume of the bottle or the ethyl alcohol concentration thereof), at the local bar, around 21:00-23:00, alongside friends. Personal pathological priors: Emergency Unit admission on 21.10.2018 at 01:25. Diagnosis: Complex cranio-facial trauma via declared physical aggression. Acute ethyl alcohol intoxication (blood-alcohol level 195.59 mg/dl). On the date of 20.01.2019, the clinical exam revealed a psychiatric emergency. The dorsal side of the left forearm presented with multiple bleeding cut wounds of various sizes and depths (fig.1). Monitored vital signs: GCS 15, FR 34 breaths/min, FC 156 beats/min, TA 137/85 mmHg, SpO₂ 98%, temperature 36.8⁰C. Blood-alcohol level upon arrival: 279.95 mg/dl. We requested a psychiatric consultation, but the consult was refused. Endovenous infusion was started with G10% + electrolytes + Vitamins B1 and B6.

After approximately 2 hours of treatment, the child becomes cooperative and the wounds were cleaned and sutured under local anesthesia and fitted with compressive dressing. The child was admitted into the Orthopedics Clinic at 05:00, 4 hours after his admission into the Emergency Unit, in order to continue the treatment.



Fig.1 Cut wounds on the dorsal side of the left forearm

Discussions

The diagnosis was made based on the clinical and paraclinical criteria: acute ethyl alcohol intoxication. Self-inflicted wounds on the dorsal side of the left forearm. The patient history and personal pathology priors support the binge-type consumption pattern [1] [2] [3]. Social and demographic characteristics: 17-year-old male, of rural origin, school student, does not live with his parents [5]. In specialized literature, binge-drinking patterns are frequently associated with trauma [6][7][8]. Authors such as Wong et al., 2006, Khurana et al., 2012, Fernie et al., 2013 show that the volume of alcohol is a determining factor of neurotoxicity in teenagers. Macleod et al., 2004 note that alcohol in itself is not neurotoxic, but binge-drinking causes its neurotoxicity. Thus, the cerebral trunk, hypothalamus, mesencephalon, temporal-

limbic cortex and prefrontal cortex are areas that produce aggressive behaviors when stimulated. Alcohol has a major social dimension [9]. From a legal-medical point of view, we wondered if the solutions of continuity were inflicted by another party or by the child. The location, linear appearance and parallel grouping of the wounds are indicative of self-inflicted harm [10](fig.1). T.P.I. is part of the group of patients with trauma following the consumption of ethyl alcohol. Most psychotic episodes caused by alcohol are self-limited by removing alcohol. Although recommended, additional psychiatric stabilization was not possible owing to limitations in terms of authority. T.P.I. requires a pediatric neuropsychiatry consult on account of his aggressive

behavior caused or precipitated by binge-drinking. The case was reported to the General Directorate of Social Assistance and Child Protection for reassessing the socio-familial status and the placement measure in the extended family (the child was placed with his maternal grandparents).

Conclusions

1. Patient history, clinical exam and blood-alcohol level are decisive in defining the case.
2. The repetitive ingestion of large quantities of alcohol over short periods of time explains the clinical and social manifestations.
3. Urgent prevention measures are necessary owing to the implications on personal and interpersonal health.

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